COMPONENTS: (1) Rubidium bromate; RbBr03; [13446-70-3]

(2) Water; H₂0; [7732-18-5]

ORIGINAL MEASUREMENTS:

Buell, H.D.; McCrosky, C.R.

J. Am. Chem. Soc. 1923, 43, 2031-4.

VARIABLES:

PREPARED BY:

T/K = 298, 303, 308and 313

Hiroshi Miyamoto and Mark Salomon

EXPERIMENTAL VALUES:

Solubility of RbBr03

t/°C	g/100g H ₂ 0	mol kg ⁻¹ (compiler)
25	2.994 2.895	0.1403 0.1357
	2.917	0.1367
	2.917 (Av) 2.93 ($\sigma = 0.04$)	0.1367 0.137
30	3.584	0.1680
	3.578	0.1677
	3.509	0.1645
	3.559 (Av) 3.56 ($\sigma = 0.03$)	0.1667 0.166
35	4.310	0.2020
	4.247	0.1990
	4.295	0.2013
	4.269	0.2001
	$(Av)4.28 \ (\sigma = 0.03)$	0.201
40	5.104	0.2392
	5.116	0.2398
	5.021	0.2353
	5.092	0.2386
	$(Av) 5.08 (\sigma = 0.02)$	0.238
40	(Av) 4.28 (σ = 0.03) 5.104 5.116 5.021 5.092	0.201 0.2392 0.2398 0.2353 0.2386

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The method for determining the solubility is similar to that described in ref 1. Mixtures of rubidium bromate and water were shaken in a thermostat. About 5 hours were required to attain equilibrium. Two methods of analysis were used. In the first method, aliquots of the saturated solutions were weighed, carefully evaporated to dryness, and dried at 115°C to constant weight. In the second method, the iodometric method was used to determine the bromate concentration. Both methods were of equal precision.

SOURCE AND PURITY OF MATERIALS:

RbCl of "doubtful purity" was converted to the alum, recrystallized, and digested with excess BaCO3 on a hot plate. The sln was filtered, treated with Ba(OH)₂ and CO₂, and filtered again. The salt was then treated with excess "pure" bromic acid and allowed to crystallize. The resulting RbBrO3 was recrystallized three times.

Source and purity of water not specified.

ESTIMATED ERROR:

Soly: precision in analyses about \pm 0.3 % (compilers), standard deviations for solubility measurements given in table calculated by the compilers.

Temp: nothing specified.

REFERENCES:

McCrosky, C.R.; Buell, H.D.
 J. Am. Chem. Soc. 1920, 42, 1786.

COMPONENTS:

- (1) Rubidium bromate; RbBr03; [13446-70-3]
- (2) Water; H₂0; [7732-18-5]

ORIGINAL MEASUREMENTS:

Breusov, O.N.; Kashina, N.I.; Revzina, T.V.; Sobolevskaya, N.G.

Zh. Neorg. Khim. <u>1967</u>, 12, 2240-3; Russ. J. Inorg. Chem. (Engl. Transl.) <u>1967</u>, 12, 1179-81.

VARIABLES:

T/K = 273 to 373

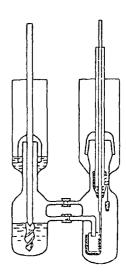
PREPARED BY:

Hiroshi Miyamoto

EXPERIMENTAL VALUES:

	Solubilit	y of RbBr03ª	
t/°C	mass %	mol %	mol kg ⁻¹ (compiler)
0	0.98	0.0835	0.0464
10	1.53	0.131	0.0728
20	2.37	0.205	0.1138
25	2.93	0.254	0.1415
30	3.45	0.301	0.1675
40	4.92	0.435	0.2425
50	6.72	0.608	0.3376
60	8.90	0.818	0.4579
70	11.17	1.051	0.5893
80	14.06	1.367	0.7667
90	17.15	1.718	0.9701
100	20.96	2.177	1.243

a The nature of the solid phase was not specified.



High temp. apparatus

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method. Equilibrium reached in 4-5 h. From 90-100°C, soly detd in apparatus shown in figure. At equilibrium, the apparatus was tilted to allow saturated solution to filter through connecting tube into weighed test tubes. The test tube was closed with a stopper, withdrawn, and weighed. Condensation on the walls of the apparatus and loss of water by evaporation was thus prevented. At the lower temperatures, ordinary soly vessels were used, and pipets with glass filters were used for sampling (no other details given). Above 50°C, the pipets were preheated in the thermostat.

SOURCE AND PURITY OF MATERIALS:

Results of analysis of RbBr03; Content of RbBr03 = 98.6 %. Impurities (mass %): K 0.12; Cs 0.1; Na 0.014; SO4 0.1; Fe < 0.0025.

ESTIMATED ERROR:

Soly: nothing specified. Temp: precision \pm 0.1 K.

REFERENCES: